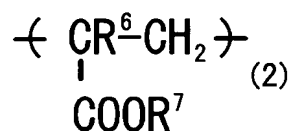
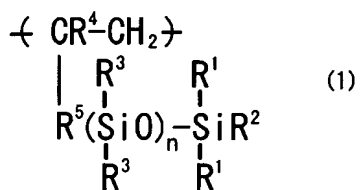
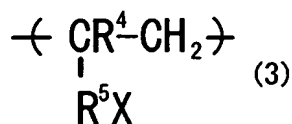


## CLAIMS

1. A hair treatment agent comprising an acryl/silicone copolymer (A) having at least one hydrolyzable silyl group per molecule.
- 5 2. The hair treatment agent according to claim 1, wherein the acryl/silicone copolymer (A) is an acryl/silicone graft copolymer having an acrylic polymer backbone and an organopolysiloxane polymer branch.
- 10 3. The hair treatment agent according to claim 1 or 2, wherein the hydrolyzable silyl group is
- $$-\text{Si}(\text{CH}_3)_{3-m}(\text{OR})_m$$
- wherein R is an alkyl group having 1 to 10 carbon atoms, an alicyclic group, an alkenyl group, an aryl group, an aralkyl group,
- 15 or an alkaryl group, m is an integer of from 1 to 3, and R may be different from each other when m is 2 or 3.
4. The hair treatment agent according to any one of claims 1 to 3, wherein the acryl/silicone copolymer (A) has the following
- 20 repeating units (1), (2) and (3):





wherein R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> may be the same with or different from each other and are selected from the group consisting of alkyl groups  
 5 having 1 to 30 carbon atoms, aryl groups, aralkyl groups and fluorinated alkyl groups,

R<sup>4</sup> and R<sup>6</sup> may be the same with or different from each other and are selected from the group consisting of a hydrogen atom and a methyl group,

10 R<sup>5</sup> may be the same with or different from each other and is an alkyleneoxycarbonyl group having 2 to 11 carbon atoms or a phenylene group,

R<sup>7</sup> is an alkyl group having 1 to 30 carbon atoms,

X is the hydrolyzable silyl group as described in claim 1 or  
 15 claim 3, and

n is an integer of from 3 to 500.

5. The hair treatment agent according to any one of claims 1 to 4, wherein the copolymer has a weight average molecular weight  
 20 of from 5,000 to 200,000.

6. A hair cosmetic comprising the hair treatment agent according to any one of claims 1 to 5.

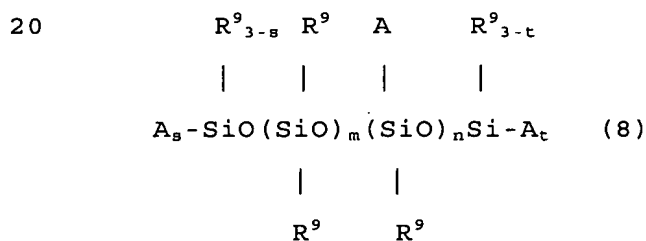
25 7. A two-agent hair cosmetic kit composed of a first agent comprising at least one selected from the group consisting of amino-modified silicones, amino acid-modified silicones, and carboxyl-modified silicones, and a second agent comprising the

hair treatment agent according to any one of claims 1 to 5.

8. A three-agent hair cosmetic kit composed of the two agents  
hair cosmetic kit according to claim 7 and an amino-modified  
5 silicone.

9. The cosmetic according to claim 7 or 8, wherein the  
amino-modified silicone is at least one selected from the group  
consisting of silicones having an amino group grafted to a silicone  
10 backbone, silicones having an amino group bonded to either one  
end of a silicone backbone, silicones having amino groups bonded  
to both ends of a silicone backbone, silicones having amino groups  
bonded to both ends of a silicone backbone and an amino group  
grafted to the silicone backbone, and silicones having a silicone  
15 chain and an amino group both grafted to a silicone backbone.

10. The cosmetic according to any one of claims 7 to 9, wherein  
the amino-modified silicone is represented by the following  
formula (8),



25 wherein A is  $-R^{10}NH_2$  or  $-R^{10}NHR^{11}NH_2$ , wherein  $R^{10}$  and  $R^{11}$  are alkylene  
groups having 1 to 8 carbon atoms,

$R^9$  may be the same with or different from each other and is selected  
from the group consisting of alkyl groups having 1 to 30 carbon  
atoms, alicyclic groups, aryl groups, aralkyl groups, and  
30 fluorinated alkyl groups,

m and n may be the same with and different from each other and are integers of from 0 to 300, and s and t may be the same with or different from each other and are integers of from 0 to 3 with  $1 \leq n+s+t$ .

5

11. The hair cosmetic according to any one of claims 6 to 10, wherein the hair cosmetic further comprises one or more of an unctuous agent (B).

10 12. The hair cosmetic according to claim 11, wherein at least part of the unctuous agent (B) is selected from the group consisting of organopolysiloxanes having a viscosity of from 0.65 to 1,000,000 mm<sup>2</sup>/s, cyclic siloxanes, and silicone rubbers or resins dissolved or dispersed in a cyclic siloxane.

15

13. The hair cosmetic according to claim 11 or 12, wherein at least part the aforesaid unctuous agent (B) has a fluorine-containing group.

20 14. The hair cosmetic according to any one of claims 6 to 13, wherein the hair cosmetic further comprises water (C).

15. The hair cosmetic according to any one of claims 6 to 14, wherein the hair cosmetic further comprises a compound (D) having  
25 an alcoholic hydroxyl group in a molecule.

16. The hair cosmetic according to any one of claims 6 to 15, wherein the hair cosmetic further comprises a water-soluble or water-swelling polymer (E).

30

17. The hair cosmetic according to any one of claims 6 to 16, wherein the hair cosmetic further comprises a surfactant (F).

18. The hair cosmetic according to claim 17, wherein the surfactant  
5 (F) is a linear or branched polyoxyalkylene-modified organopolysiloxane.

19. The hair cosmetic according to claim 17, wherein the surfactant  
(F) is a linear or branched polyglycerin-modified  
10 organopolysiloxane.

20. The hair cosmetic according to any one of claims 6 to 19, wherein the hair cosmetic further comprises a crosslinked organopolysiloxane (G).

15 21. The hair cosmetic according to claim 20, wherein the crosslinked organopolysiloxane (G) has been incorporated in the cosmetic in a state swollen in a silicone having a viscosity of from 0.65 to 10.0 mm<sup>2</sup>/sec in an amount larger than a weight of the crosslinked  
20 organopolysiloxane (G).

22. The hair cosmetic according to claim 20 or 21, wherein the crosslinked organopolysiloxane (G) is a reaction product of an organopolysiloxane having at least two alkenyl groups per molecule  
25 with an organohydrogenpolysiloxane having a Si-H bond.

23. The hair cosmetic according to any one of claims 20 to 22, wherein the crosslinked organopolysiloxane (G) has at least one moiety selected from the group consisting of polyoxyalkylene  
30 moieties, polyglycerinmoieties, alkyl moieties, alkenyl moieties,

aryl moieties and fluoroalkyl moieties.

24. The hair cosmetic according to any one of claims 6 to 23,  
wherein the cosmetic further comprises a silicone resin (H)  
5 selected from the group consisting of acrylsilicone resins which  
do not have a hydrolyzable silyl group, silicone network compounds  
represented as MQ, MDQ, MT, MDT, or MDTQ, and silicone network  
compounds having at least one moiety selected from the group  
consisting of pyrrolidone moieties, long-chain alkyl moieties,  
10 polyoxyalkylene moieties, fluoroalkyl moieties, and amino  
moieties.

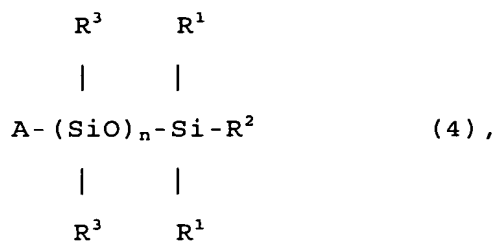
25. The hair cosmetic according to any one of claims 6 to 24,  
wherein the cosmetic further comprises one or more of powder and/or  
15 coloring agent (I).

26. The hair cosmetic according to claim 25, wherein at least  
part of the powder and/or coloring agent (I) is crosslinked silicone  
fine powder with a structure of crosslinked dimethylsilicone,  
20 polymethylsilsesquioxane fine powder, silica made hydrophobic,  
or composite fine powder composed of spherical silicone rubber  
coated with polymethylsilsesquioxane particles.

27. The hair cosmetic according to any one of claims 6 to 26,  
25 wherein the cosmetic is in the form of liquid, milky lotion, cream,  
solid, paste, gel, multilayer, mousse, spray or stick.

28. A method to prepare the hair treatment agent according to  
any one of claims 1 to 5, wherein the method comprising the step  
30 of copolymerizing 1 to 97 wt % of an organopolysiloxane represented

by the following formula (4) having a radically polymerizable group, 0 to 95 wt % of an acrylic monomer represented by the following formula (5), and 1 to 10 wt % of a silane compound represented by the following formula (6) having a radically polymerizable group,



wherein  $R^1$ ,  $R^2$  and  $R^3$  may be the same with or different from each other and are selected from the group consisting of alkyl groups having 1 to 30 carbon atoms, aryl groups, aralkyl groups and fluorinated alkyl groups, A is a radically polymerizable group represented by the following formula (7),

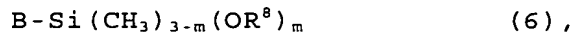


wherein  $R^4$  is a hydrogen atom or a methyl group and  $R^5$  is an alkyleneoxycarbonyl group having 2 to 11 carbon atoms or a phenylene group, and

n is an integer of from 3 to 500;



wherein  $R^6$  is a hydrogen atom or a methyl group and  $R^7$  is an alkyl group having 1 to 30 carbon atoms;



wherein B is selected from the groups defined for A above, independently of A,  $R^8$  is an alkyl group having 1 to 4 carbon atoms or an alkenyl group, m is an integer of from 1 to 3, and  $R^8$ 's may be different from each other when m is 2 or 3.